

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 1. This sheet, which includes Fig. 1, replaces the original sheet including Fig. 1.

Attachment: Replacement Sheet (1)

### REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendments and following discussion, is respectfully requested.

Claims 1-25 are pending in this application. Claims 1, 7, 9, 17 and 25 are amended by the present amendment. Support for this amendment can be found at least on page 41, line 22 through page 42, line 7, page 45, lines 10-22 and Figure 9. No new matter is added. Withdrawn Claims 26-158 are canceled without prejudice or disclaimer.

In the outstanding Office Action, the drawings were objected to under 37 C.F.R. § 1.83(a); Claims 1-6, 9-14, 17-22, and 25 were rejected under 35 U.S.C. § 102(e) as anticipated by Suzuki (U.S. Patent Publication No. 2003/0049039); and Claims 7, 8, 15, 16, 23, and 24 were rejected under 35 U.S.C. § 103(a) as unpatentable over Suzuki in view of Hrai et al. (U.S. Patent Publication No. 2004/0008245, hereafter Hrai).

Applicants and Applicants' representatives thank Examiner Gutierrez for the courtesy of a personal interview with Applicants' representatives on December 7, 2005. During the interview, differences between the applied references and Claim 1 of the invention were discussed. During the interview, the Examiner agreed that amending Claim 1 to indicate how the minimum value is obtained would distinguish over the art of record. Comments discussed during the interview are reiterated below.

In response to the objection to the drawings, Figure 1 has been amended to show an image density control unit and an alternative location of the optical detecting unit. In addition, the optical detecting unit 130 in Figure 1 is positioned facing the tension roller 124 of the transfer belt apparatus 120 and arranged not to be opposite to a portion of the transfer belt along which the recording medium is carried, as recited in Claim 7.<sup>1</sup> Accordingly, Applicants respectfully request that the objection with respect to the drawings be withdrawn.

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<sup>1</sup> Specification at page 37, line 20 to page 38, line 2.

Applicant respectfully traverses the rejection of Claims 1-6, 9-14, 17-22, and 25 under 35 U.S.C. § 102(e) as anticipated by Suzuki.

Amended independent Claims 1, 9 and 17 are directed to an image forming apparatus including, *inter alia*, the image density control unit (1) ***determines a range of calculated ratios between a regular reflection light and a diffuse reflection light***, (2) ***selects a minimum value from the determined range of calculated ratios***, and (3) controls the image density based on a value obtained by subtracting a result of multiplying the diffuse reflection output by ***the minimum value selected from the determined range of calculated ratios*** from the regular reflection output of the reference pattern for each color detected by the optical detecting unit. This claimed feature allows the color reference patterns to be accurately detected without being affected by the surface condition of the transfer belt.<sup>2</sup>

In non-limiting example, Figure 9 shows selecting a minimum value for a range of calculated ratios between the regular reflection output and the diffuse reflection output.

Suzuki describes an image forming apparatus with an image density controlling mechanism. As shown in Figure 1, the pattern sensor 13 uses a near infrared LED as a light emitting element and photodiode as a light receiving element to detect density from a regular reflection light amount and a diffuse reflection amount that are obtained from a developed image.<sup>3</sup> Based on the light detection, a CPU 300 calculates a corrected output to control the image density. The corrected output formula of Suzuki includes a correction coefficient, which is determined by dividing the p-wave (regular reflection light output) by the s-wave (defused reflection light output). However, Suzuki does not disclose or suggest selecting a minimum value, but describes setting the correction coefficient, for example, based on a desired development contrast.<sup>4</sup>

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<sup>2</sup> Specification at page 45, lines 10-22.

<sup>3</sup> Suzuki at ¶ 0063 and Fig. 1.

<sup>4</sup> Suzuki at ¶ 0080.

Therefore, Suzuki does not disclose or suggest the image density control unit (1) *determines a range of calculated ratios between a regular reflection light and a diffuse reflection light*, (2) *selects a minimum value from the determined range of calculated ratios*, and (3) controls the image density based on a value obtained by subtracting a result of multiplying the diffuse reflection output by *the minimum value selected from the determined range of calculated ratios* from the regular reflection output of the reference pattern for each color detected by the optical detecting unit, as recited in Claims 1, 9 and 17.

Accordingly, Applicants respectfully submit that rejection under 35 U.S.C. § 102(e) of independent Claim 1, 9 and 17 and any claims depending therefrom be withdrawn.

Although different in scope independent Claim 25 recites, *inter alia*, *determining a range of calculated ratios between a regular reflection output and a diffuse reflection output of the reference pattern, selecting a minimum value from the determined range of calculated ratios*, and calculating the amount of toner transfer on the reference pattern based on a relative ratio between a value obtained by subtracting a result of multiplying the diffuse reflection output by *the minimum value selected from the determined range of calculated ratios* from the regular reflection output of the reference pattern, and a value obtained by subtracting a result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output in a background of the transfer belt or the intermediate transfer body. Therefore, Applicants respectfully request that the rejection with respect to independent Claim 25 be withdrawn.

The rejection of Claims 7, 8, 15, 16, 23, and 24 under 35 U.S.C. § 103 as unpatentable over Suzuki in view of Hrai, is overcome first because of the deficiencies to Suzuki discussed above.

Further, Hrai is assigned to Ricoh Company, Ltd., the assignment of which is recorded at reel 014540/frame 0493. The inventor of the above-identified application was under an obligation to assign the subject matter of the present invention to Ricoh Company, Ltd. at the time of invention.

Hrai was filed as a U.S. Patent Application on May 30, 2003 and published on January 15, 2004. Accordingly, Hrai is only available against the pending claims under 35 U.S.C. § 102(e).

Thus, because Hrai was obligated to be commonly assigned to Ricoh Company, Ltd. with the above-identified application and is only available as prior art under 35 U.S.C. § 102(e), it is respectfully submitted that Hrai may not be applied against the pending claims under 35 U.S.C. § 103. It is therefore respectfully requested that this rejection be withdrawn.

Consequently, in view of the foregoing discussion and present amendments, it is respectfully submitted that this application is in condition for allowance. An early and favorable action is therefore respectfully requested.


Respectfully submitted,

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